Information needs of academic medical scientists at Chulalongkorn University*

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The information needs of scientists in English-speaking countries have been studied and reported in the library literature. However, few studies exist on the information-seeking patterns of scientists in developing countries [1–2], and no study has examined the information needs of medical scientists in developing Asian countries.

This study investigated the information needs of academic medical scientists at Chulalongkorn University in Bangkok, Thailand. The results indicate that medical scientists have three types of information needs: identifying up-to-date information, obtaining relevant studies and data, and developing research topics. Thai scientists' information-seeking behavior was different from that of scientists in developed countries. The study shows a high use of libraries as information providers; Thai medical scientists rely heavily on information from abroad.

INTRODUCTION

Thailand is a developing country with a rapidly growing economy [3]. The country's socioeconomic development is guided by a five-year National Economic and Development Plan. The current Sixth Plan (1987–1991) recognizes research and development as a priority and targets medical science as one of the primary areas. Since medical research directly impacts the quality of the national health care system, it is vitally important for the nation's development. Medical research is conducted by the government and by university medical schools. Chulalongkorn University's (CU) Faculty of Medicine, one of the largest in the country, has a long history of medical research. CU provides extensive support for the research activities of medical scientists and was a logical site for a study of research-related information needs and information-seeking patterns. The CU Medical Library was established in 1948; it serves as a center for biomedical information for health professionals both within and outside CU. The library's collection consists of more than 27,000 monographs, 37,000 bound journal volumes, 369 periodical titles, and a comprehensive collection of audiovisual materials. The library is located in the building housing the Faculty of Medicine. The staff is composed of the head librarian, four senior librarians, and twenty library staff members. The library has developed a number of computerized databases and installed a CD-ROM system in June 1987.

INFORMATION-SEEKING PATTERNS

The study's purpose was to identify the components of information seeking by medical scientists: research-related work situations, information providers used by medical scientists, and the use and nonuse of libraries as information providers.

The study asked:

- When do medical scientists need specific information for decision making, problem solving, or for research?
- Which information providers are most used?
- Which provider is considered to be best?
- In which research-related situations are libraries used?
- What are the reasons for the use and nonuse of libraries?

The study also compared the responses of basic and

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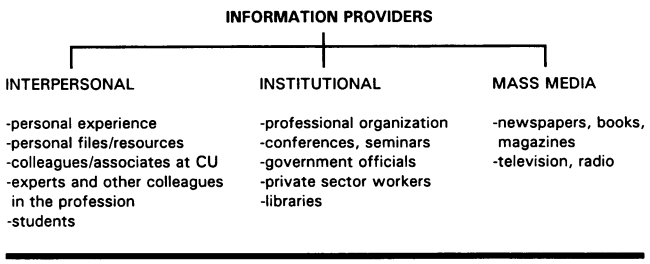
Figure 1
Information providers



clinical scientists to these questions; the author hypothesized there would be no statistically significant correlation (.05 level) between the rankings of basic and clinical scientists for these questions.

For 46.5% of the respondents, "identifying up-to-date information" was the most important situation. "Receiving relevant studies or data" was cited by 18.7%, and "finding a research topic" was identified by 13.4% of the population.

Data were collected using a close form self-administered questionnaire (Appendix). Responses were obtained from 199 (58.5%) of 340 CU medical scientists. A pretest was conducted to check reliability and validity of data. Responses were coded, and a statistical analysis software package was used for processing the data. The nonparametric test used for hypothesis testing was Spearman's rank-order correlation coefficient test (Spearman's *rho*). Data were ranked and tested for significant correlation.

Common information-seeking situations

Respondents were asked to identify the most important research-related situation in which they had to make decisions in the last two years, find answers to questions, solve problems, or try to improve their understanding (question one). Responses fell into the nine categories listed in question one of the survey. For 46.5% of the respondents, "identifying up-to-date information" was the most important situation. "Receiving relevant studies or data" was cited by 18.7%, and "finding a research topic" was identified by 13.4% of the population. The least frequently cited situation was "writing up the result of a study" (1.9%). Hypothesis testing indicated a strong correlation between rankings by basic and clinical scientists (*rho* = .82); there were no significant differences between the groups in research-related situations faced in the last two years.

Not surprisingly, the most frequently identified situations occurred during the early stages of research activity. The presentation stage of research work was identified infrequently, possibly because researchers relied upon their own knowledge rather than on information sought from other sources during that stage of the research.

Major information providers

Medical scientists were given a list of providers of information and asked which, if any, were used in their research (question two). The providers were categorized in three groups (Figure 1).

"A library/information center on campus" was the most frequently cited (25.5%), followed by "experts/other colleagues in the profession" (13.5%) and "your own experience/knowledge" (13.4%). There was a high use of libraries on- and off-campus, but many respondents cited the library on campus as their only information provider.

Medical scientists emphasized the use of information resources produced or only available abroad. One respondent noted that his only source of information was non-Thai printed sources, and another obtained printed materials via international interlibrary loan.

Most respondents ranked "convenience" as the major factor in choosing a provider. The quality of the information received was also important; providers that offered up-to-date and accurate information were considered to be of greatest benefit.

There was a very high correlation (*rho* = .95) between basic and clinical scientists in their sources of information and in the reasons for library use ("has what was needed/wanted," "convenient location," and "helpful/knowledgeable staff").

Figure 2 shows the most beneficial information providers (question three); "a library/information center on campus" was the most frequently cited provider (70.9%). Most respondents ranked "convenience" as the major factor in choosing a provider (question four). The quality of the information received was also important; providers that offered up-to-date and accurate information were considered to be of greatest benefit. Only 5.0% of the respondents did not use a library in the situations identified.

Medical libraries as important providers

The library was the major provider and the provider of greatest benefit for information seeking in research-related situations. For medical scientists who

were library users, a number of reasons were identified for library use (question five). The most frequently identified reasons were "has what was needed/wanted" (20.7%), "convenient location" (17.8%), and "helpful/knowledgeable staff" (12.6%). "Has computer online search service" was also indicated as a reason for library preference. The data suggested that respondents consulted the library knowing or assuming that the information they needed was available. This positive attitude extended to librarians who were frequently cited as being both helpful and knowledgeable.

Medical scientists who identified the library as an information provider were asked to state the reason for library use (question six). The most frequently identified reason was to "photocopy materials for your personal research collection" (11.9%)—an indication that medical scientists also relied on their personal acquaintance with resources and use of the library to increase or update their own research collection. The library was also used frequently to "get materials from other libraries via interlibrary loan" (11.5%) and to "read journal articles" (11.5%). Online search services were used to gain access to bibliographic information, but greater emphasis was placed on getting the material rather than on bibliographic information; interlibrary loan services were of paramount importance in getting materials from abroad.

As noted, 5.0% of the respondents were nonusers of the library (question seven). Reasons for this were given as "lack of time" (23.5%), "didn't need a library" (17.6%), "the library frequently does not own what I need/want" (11.7%), or "staff provides incomplete service" (11.7%). Other reasons for nonuse were

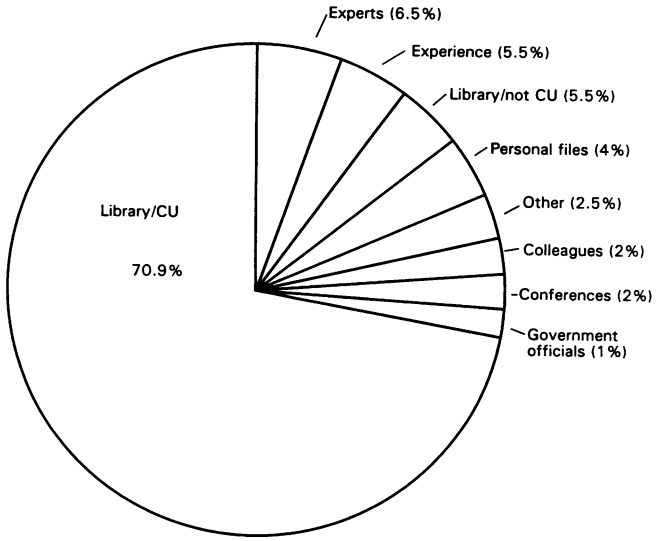
- use of a research assistant to find information
- information from experts was needed rather than published information
- compilation of personal research collections that do not require library services
- need for specific subject information for which there is no specialized research library at CU

Inconvenient location or hours, or unfriendly staff were not given as reasons for nonuse. Previously successful experience in the use of the library seemed to have an impact on both present and potential use. About 11% of the nonusers stated that the library frequently did not own what they wanted.

CONCLUSIONS

The findings indicated that academic medical scientists have three major information needs: to identify up-to-date information, to obtain relevant studies or data, and to find a research topic. These needs coincide with the needs of scientists in developed countries, including the need to keep up with current progress in a field [4] and to find and check all relevant information on a given subject [5].

Figure 2
Chart of information providers of greatest benefit to medical scientists (n = 199)



The study revealed that information-seeking behavior of scientists in developing countries is different from that of scientists in developed countries in that there is a high use of the library as an information provider. "A library/information center on campus" was overwhelmingly identified as the provider of greatest benefit. Most previous studies on information needs of scientists in developed countries found that interpersonal providers, especially colleagues and experts, are the most important sources of information. Thai scientists do consult experts and other colleagues frequently, but this source is ranked second in importance; more recognition and importance was placed on the library's material and personnel resources. Some studies from developed countries have reported that the library was fairly well regarded as a general source of information [6] and that users were

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generally satisfied with library services [7]; others have concluded that scientists do not recognize the library as an information provider and are quite ignorant of the librarian's ability to help [8].

The majority of medical scientists in this study were library users and said that the library had what was needed. The information needed by respondents was found in formal publications—particularly journal articles, indexes, and abstracts. These sources of information are also widely considered to be desirable by users in developed countries. Formal publications were reference sources that are available mostly from a library rather than from other providers; this was a factor for Thai medical scientists' frequent use of the library. These sources, especially indexes and abstracts, are produced primarily in developed countries; thus, Thai scientists rely heavily on information from abroad. Library services, such as online searching and interlibrary loan, were recognized as the most important services because they provide access to extensive information resources not limited to those available in the country.

Information technology, e.g., CD-ROMs available in a library on campus, was cited as one of the services that encouraged use of the library; CU Medical Library uses Compact Cambridge MEDLINE†. CD-ROM search service offers a wide range of access to international information that the medical scientists required to keep abreast of developments in the field.

This study touched on only one aspect of developing interests in seeking and providing information and determining the level of satisfaction with information providers among professional groups. Further studies in related areas should provide valuable links in this important area of study.

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APPENDIX

Survey Questionnaire

Information Needs of Academic Medical Scientists

Department_____ Faculty of Medicine

The purpose of this brief survey is to explore a research-related situation in which you have had to make a decision, find an answer to a question, solve a problem, or try to understand something.

1) Please identify *the most important* research-related situation you have encountered during the last two years. It was:

____ a) finding a research topic
____ b) identifying up-to-date information
____ c) receiving relevant studies/data
____ d) designing equipment or apparatus
____ e) choosing a data-collection method
____ f) formulating solutions or experiments
____ g) interpreting collected data
____ h) writing up the results of a study
____ i) other (please specify)_____

2) Whenever you are are in a situation such as the one you have identified, there are often questions for which you need to find answers, things you want to understand better or just think about. In that process, did you attempt to get the answer or part of it from (*please check as many as are applicable*):

____ a) your own experience/knowledge
____ b) your personal files/resources
____ c) your colleagues/associates at Chulalongkorn University
____ d) experts/other colleagues in the profession
____ e) your students
____ f) professional organizations
____ g) conferences, seminars, or meetings
____ h) government officials (outside Chulalongkorn University)
____ i) private sector workers
____ j) a library/information center on campus
____ k) a library/information center off campus
____ l) newspapers, books, or magazines
____ m) television or radio
____ n) other (*please identify*)_____

3) Which of these sources was of the greatest benefit? (*Please indicate with letter a, b, c, etc.*) ____

4) Why did you originally choose that source? Because of:

____ a) convenience
____ b) cost
____ c) timeliness
____ d) accuracy
____ e) understandability
____ f) interpersonal contact
____ g) other (*please specify*) _____

If you used libraries at all in that information seeking, please answer the next series of questions. If not, please answer question 7.

5) If you used the library as is reflected in your answer to question #2, what was/were the primary reason(s)? (*Please check as many as are applicable.*)

____ a) convenient location
____ b) convenient service hours
____ c) has what was needed/wanted
____ d) friendly staff
____ e) helpful/knowledgeable staff
____ f) needed information not available elsewhere
____ g) has computer online search service
____ h) telephone inquiring available
____ i) happened to find information there
____ j) has latest information
____ k) referred by other sources
____ l) other (*please specify*) _____

6) For what purpose(s) did you use the library?

____ a) preview books
____ b) read journal articles
____ c) compile a list of research studies
____ d) consult printed indexes/abstracts
____ e) use other reference sources in the library
____ f) use online search service to compile a bibliography
____ g) use online search service for other purposes
____ h) photocopy materials for your personal research collection
____ i) get materials from other libraries via interlibrary loan
____ j) use materials already known to you but not owned by you
____ k) consult librarian/information specialist on strategies for accessing materials
____ l) other (*please specify*) _____

If you used the library, please stop here. Thank you.

7) If you did not use the library, is/are there reason(s) why? (*Please check as many as are applicable.*)

____ a) lack of time
____ b) inconvenient location
____ c) inconvenient service hours
____ d) knew couldn't find what was needed
____ e) material is not up-to-date
____ f) the library frequently does not own what I need/want
____ g) unfriendly staff
____ h) staff provides incomplete service
____ i) didn't need a library
____ j) didn't occur to me
____ k) other (*please specify*) _____

Thank you for your cooperation in answering this brief questionnaire.

FROM THE *BULLETIN*—50 YEARS AGO

Minutes of the forty-second annual meeting: reports of officers and committees

By Mrs. Eileen R. Cunningham, Chairman

International work is largely at a standstill. No reports of sub-committees of the International Federation of Library Associations are to be made this year. There is no doubt that scientific journals in every country face a difficult period of publication. The members of this committee have unanimously expressed themselves of the opinion that the wisest course is to take no drastic action of any kind at this difficult time, but to wait further developments. It is, however, entirely obvious that American libraries cannot bear the brunt of any markedly increased prices of periodicals no matter from what cause, and the solution of the difficulties should be met by publishers and editors as far as possible by inaugurating drastic economies and increased efficiency in publication rather than by increased prices. Even if journals must temporarily suspend publication, it is better than to attempt to introduce big increases in prices which bring inevitably the ensuing vicious cycle of loss of subscriptions and further increase in prices to compensate, until an acute situation is produced again as in the years just prior to 1932. Libraries, for their part, should maintain subscriptions in as far as they are able.

Bull Med Libr Assoc 1940 Oct;29(1):48